

THE SUSTAINABILITY OF NEW HAMPSHIRE'S SURFACE WATERS
Lakes Management Advisory Committee and the Rivers Management Advisory Committee

January 2008

APPENDIX
Summary and Evaluation of Major Programs and Efforts to Address
Water Quality and Water Quantity in New Hampshire

Rivers Management and Protection Program - NH Department of Environmental Services

Program Evaluation Summary	
Goals	The purpose of the program is to protect the state's significant river resources for the benefit of present and future generations through a unique combination of state and local resource management and protection.
Charges	<ul style="list-style-type: none"> - To assist communities with the process to designate a river into the RMPP. - To ensure that designated rivers meet water quality standards. - To review, comment and approve the disposal of state-owned land with frontage or providing access to a river. - To develop long-range management plans for state-owned land on all designated rivers. - To aid in development of River Corridor Management Plans on all designated rivers to guide local land use decisions. - To establish protected instream flow for all designated rivers.
Actions Taken	<ul style="list-style-type: none"> - 15 rivers have been designated into the program - 12 out of 15 designated rivers have existing River Corridor Management Plans. - The RMAC established a policy and procedure for the review of proposed state-owned land dispositions in 2002. - In 2002 compromise legislation, Chapter 278 was enacted that initiated a pilot program for instream flow protection on the Lamprey and Souhegan Rivers.
Action Outcomes	- The Souhegan River will have an established protected instream flow in early 2008, with the Lamprey River to follow.
Relationship to RMAC/ LMAC Sustainability Initiative	The State has charged the RMPP with multiple tasks aimed at protecting designated rivers. However, due to limits in available data, funding, and staffing these tasks have largely not been evaluated or accomplished since the establishment of the program in 1988.
Possible Indicators	Water Quality Long-range management plans River Corridor Management Plans Protected instream flow

Lakes Management and Protection Program - NH Department of Environmental Services

Program Evaluation Summary	
Goals	The purpose of the program is to ensure the continued protection of the state's lakes and ponds as environmental, social, and economic assets for the benefit of present and future generations.
Charges	<ul style="list-style-type: none"> - To develop "Lakes Management Criteria for NH State Agencies." - To review and comment upon the disposal of state-owned land with frontage or providing access to a lake. - To develop "Guidelines for Local Lake Management and Shoreland Protection Plans." - To aid in the development of lake management and shoreland protection plans.
Actions Taken	<ul style="list-style-type: none"> - The Lakes Management Criteria was produced in 1996. - The LMAC developed a policy and procedure for the review of proposed state-owned land dispositions in 2003.
Action Outcomes	- As of 2006, 73 of the 106 recommendations of the Lakes Management Criteria had been implemented.
Relationship to RMAC/ LMAC Sustainability Initiative	The State has charged the LMPP with multiple tasks aimed at protecting lakes and great ponds. However, due to limits in available data, funding, and staffing many of these tasks have not been accomplished since the establishment of the program in 1990.
Possible Indicators	<ul style="list-style-type: none"> - Lakes Management Criteria for NH State Agencies - Implementation of all recommendations, and updates to the document - Guidelines for Lake Management and Shoreland Protection Plans - Lake Management Plans - Determination of the carrying capacity of the state's lakes

Climate Change

Northeast Climate Impacts Assessment - *Confronting Climate Change in the U.S. Northeast: New Hampshire – Science, Impacts and Solutions: 2007*

The Intergovernmental Panel on Climate Change (IPCC) reported in February 2007 that it is “unequivocal” that the Earth’s climate is warming and that it is “very likely” (a greater than 90% certainty) that this is the result of the burning of fossil fuel and other human activities. This report aimed to quantify what changes would occur in the Northeast under scenarios of high and low future emissions. The most dramatic prediction of this report under the high emission scenario indicates that by the end of the century New Hampshire’s climate will be similar to that of Virginia and North Carolina.

Project Evaluation Summary	
Goals	To describe how climate change will impact New Hampshire under two scenarios of future emissions: continued, uncontrolled rise in emissions and regulate, reduced emissions.
Findings	Projections with the higher emission scenario indicate a daily temperature increase of up to 14 degrees; the lower scenario results in half this temperature increase. With either scenario New Hampshire faces changes to its climate and resources that will result in economic losses to residents.
Recommendations & Conclusions	Action must be taken now to lower emissions to curb impacts to future generations. Emphasis put on individual responsibility and actions to reduce emissions.
Actions Taken	None.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	All predicted climate change scenarios show impacts to water resources related to ecological and socioeconomic factors. This indicates a need for continued monitoring and planning for the state’s surface waters in order to balance human and ecological demands.
Relationship to RSA 483 & 483-A	<p>RSA 483:1 and 483-A:1 state that New Hampshire must insure continued viability of lakes and rivers for current and future generations. To address this:</p> <ul style="list-style-type: none"> - Lake and river management plans must be developed and take into account the impacts of climate change. - Water quality data is needed to keep track of changing conditions in the state’s surface waters. - Instream flow studies must plan for future changes in water levels and flows.

Growth and Development

NH Office of State Planning - *Managing Growth in New Hampshire: Changes and Challenges*: 2000

The NH Office of Energy and Planning (OEP) was charged with House Bill 207 to study land development patterns in New Hampshire, and to make recommendations on local, regional and state growth management and associated legislative initiatives. One recommendation was for more flexibility in planning and zoning for local governments, along with more incentives for working together on regional planning issues. Additional legislation was also recommended to strengthen coordination between state and regional planning goals and priorities.

Project Evaluation Summary	
Goals	To study development patterns in NH and make growth management and legislative recommendations.
Findings	<ul style="list-style-type: none"> - Current land use planning practices may be inadequate for preserving the character of New Hampshire. - "Sprawl" is a major concern for many towns and individuals in New Hampshire.
Recommendations & Conclusions	<ul style="list-style-type: none"> - Additional legislation was also recommended to strengthen coordination between state and regional planning goals and priorities. - More flexibility in planning and zoning for local governments, along with more incentives for working together on regional planning issues. - Increasing funding for NH Land Community Heritage Investment Program (LCHIP).
Actions Taken	Unknown.
Action Outcomes	Increase in LCHIP funding from FY 2005-2006 \$1.5 million to FY 2007-2008 \$6 million.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about the increase in population in NH; this will likely result in increase pressure on water resources and need for better planning.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and RSA 483-A:5 call for protection of water quality in the state's designated rivers and lakes. Monitoring water quality is necessary due to assess potential impacts from development. - RSA 483:10 calls for the development of local river corridor management plans that may be adopted at the municipal level as part of a community's master plan. This aligns with the recommendation for more cooperation on regional issues. - RSA 483-A:7 V(c) calls for the development of lake and shoreland management plans to address existing and future land uses. This aligns with the recommendation for more cooperation on regional issues.

Growth and DevelopmentNH Office of Energy and Planning (OSP) - *Achieving Smart Growth in New Hampshire*: 2003

This project documents how New Hampshire is changing and highlights some positive examples of development and conservation throughout the state. It stresses the need for towns to implement smart growth principles in their master plans and zoning ordinances to help maintain the town's historical characteristics while allowing for development and opportunities for future generations.

Project Evaluation Summary	
Goals	To aid citizens and planners to enhance or maintain their town's historical character while allowing future generations opportunities and choices regarding development.
Findings	<ul style="list-style-type: none"> - Most current zoning ordinances prohibit traditional patterns of mixed use development that can lead to sprawl. - Land is being consumed at twice the rate of population increases. - Examples of smart growth are occurring throughout New Hampshire and New England.
Recommendations & Conclusions	<ul style="list-style-type: none"> - Eight principles were developed to help communities evaluate and update their local planning policies and regulations keeping smart growth in mind. - One principle was to protect environmental quality by minimizing impacts from human activities and planning and maintaining natural areas that contribute to quality of life.
Actions Taken	Unknown.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about need to help communities develop zoning regulations that help minimize environmental disturbance while enhancing the communities.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. Monitoring water quality is necessary to assess the potential impacts from development. - RSA 483:10 calls for the development of local river corridor management plans that may be adopted at the municipal level as part of a community's master plan. - RSA 483:10(a) calls for the establishment of long-range management plans that take into account surrounding land use. - RSA 483-A:7, I requires the development of detailed Guidelines for Coordinated Lake Management and Shoreland Protection Plans with recommendations for implementation. - RSA 483-A:7 V(c) calls for the development of lake and shoreland management plans to address existing and future land uses.

Growth and Development

New Hampshire Department of Environmental Services - Watershed Management Approach: 2003

The watershed approach is a management strategy that addresses water quality and ecosystem problems at the watershed level rather than at the individual waterbody level. In addition, the watershed approach empowers local communities with greater involvement in decisions that affect their future. DES has prioritized watersheds into three management categories - protection, threatened and restoration.

Project Evaluation Summary	
Goals	To develop a watershed management process that will lead to greater efficiency in using DES staff and resources for watershed issues, and provide greater opportunities for collaborative efforts in watershed management.
Findings	<ul style="list-style-type: none"> - The watershed approach should not replace current regulations, but enhance them. - Flexibility within the agency is critical. - Support from upper-level management, other agencies, other divisions is essential. - Coordination of watershed management activities is vital.
Recommendations & Conclusions	<ul style="list-style-type: none"> - Create a watershed point contact for those outside of the agency. - Create a steering committee with members from other state agencies. - Conduct pilot of watershed approach. - Acquire additional funds for supporting local watershed protection efforts.
Actions Taken	Watershed pilot approach projects were conducted in the Lake Waukegan and Lake Sunapee watersheds.
Action Outcomes	Completed pilot projects.
Relationship to RMAC/LMAC Sustainability Initiative	DES has recognized the importance of coordinating watershed programs and has attempted to do so without creating new regulations. However, there is a recognized need for additional staff time and resources to meet current programmatic demands along with coordination between watershed programs.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:10 calls for the development of local river corridor management plans that may be adopted at the municipal level as part of a community's master plan. It also allows for a watershed based plan to be developed. -RSA 483:10-a calls for the development of long-range management plans for state-owned land. - RSA 483-A:7, I requires the development of detailed Guidelines for Coordinated Lake Management and Shoreland Protection Plans with recommendation for implementation. - To date, selection criteria for the development of long-range management plans have begun and LMPP staff are currently developing the detailed Guidelines for Coordinated Lake Management and Shoreland Protection Plans document.

Growth and DevelopmentNew Hampshire Estuaries Project - *Management Plan Update: 2005*

The goal of the New Hampshire Estuaries Project (NHEP) is to identify and maintain sustainable use of the water resources in the coastal watersheds. Two new action plans were developed as part of the Management Plan 2005 update – a monitoring plan of 34 environmental indicators and 18 “supporting variables” to track the effectiveness of the plan, and an implementation plan to address each indicator. Implementation plans were prioritized to help ensure management goals were met. It is the recommendation of the NHEP for the development of a comprehensive statewide management plan for the protection of the state's surface waters.

Project Evaluation Summary	
Goals	To identify and maintain sustainable use of the water resources in the coastal watersheds.
Findings	A monitoring plan of thirty-four environmental indicators and eighteen “supporting variables” has been used to track the effectiveness of the plan.
Recommendations & Conclusions	An implementation plan was developed for addressing each indicator.
Actions Taken	Implementation plans were prioritized to help ensure management goals were met.
Action Outcomes	2006 State of the Estuary Conference/Report and score card of indicators were developed.
Relationship to RMAC/LMAC Sustainability Initiative	<p>A comprehensive statewide management plan is needed to protect the state's surface waters.</p> <p>Local lake and river management plans need to be developed to support carrying out the NHEP implementation plan.</p> <p>Water quality monitoring is needed to support the monitoring plan and the indicators.</p>
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. Monitoring water quality is necessary to have meaningful data to support indicators. - RSA 483:10 calls for the development of local river corridor management plans that may be adopted at the municipal level as part of a community's master plan. It also allows for a watershed based plan to be developed. - RSA 483:10-a calls for the development of long-range management plans. - RSA 483-A:7, I requires the development of detailed Guidelines for Coordinated Lake Management and Shoreland Protection Plans with recommendation for implementation. - To date, selection criteria for the development of long-range management plans have begun and LMPP staff are currently developing the detailed Guidelines for Coordinated Lake Management and Shoreland Protection Plans document.

Growth and Development

Society for the Protection of New Hampshire Forests - *New Hampshire's Changing Landscape*: 2005

In 2005 the Society for the Protection of New Hampshire Forests updated their 1999 analysis of changes in population growth, development and land use and the impacts on natural resource values. This study uses the latest scientific information to identify the extent and distribution of some of the most critical natural resources that make up New Hampshire's landscape. It is the intent of this study to document current baseline conditions for the most critical natural resources in New Hampshire, and to foster research to monitor and analyze future trends.

Project Evaluation Summary	
Goals	To document current baseline conditions for the most critical natural resources in New Hampshire, and to foster research to monitor and analyze future trends.
Findings	<ul style="list-style-type: none"> - New Hampshire grew by 17.2% between 1990 and 2004; twice the rate of the rest of New England. - Residential development is expanding north and along highway corridors. - 291,000 additional acres have been protected between 1998 and 2004.
Recommendations & Conclusions	To continue to monitor growth trends related to natural resource in New Hampshire.
Actions Taken	None.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about the increase in population in NH; this will likely result in increase pressure on water resources.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - Monitoring water quality is necessary due to the potential impacts from development. - RSA 483-A:5(f) requires the Lakes Coordinator, in consultation with the LMAC, to prepare and submit to the Legislature state level management criteria, that include recreational uses of lakes consistent with the carrying capacity and character of each lake.

Growth and Development

New Hampshire Department of Environmental Services & New Hampshire Estuaries Project - *Land Conservation Plan for New Hampshire's Coastal Watersheds: 2006*

The New Hampshire coastal watersheds' population is projected to grow by 100,000 residents between 2000 and 2025. To address this growth the land conservation plan was developed to prioritize those lands and waters that are most important for conserving native flora and fauna, natural communities, and coastal water quality. The plan is intended to be used as a guidance tool and resource for landowners, communities and organizations interested in land conservation.

Project Evaluation Summary	
Goals	To address population growth impact on the coastal watersheds by developing a land conservation plan that prioritizes the lands and waters that are most important for protecting coastal water quality.
Findings	Identification of 75 core areas in the coastal watersheds most in need of protection for conservation and resource protection purposes and what level of protection those areas currently have.
Recommendations & Conclusions	<ul style="list-style-type: none"> - Adoption of the Land Conservation Plan at the state, regional, and local levels. - Protect land through acquisitions, especially in core areas. - Regulate location, design, and density of development in core areas to minimize harmful impacts while allowing for reasonable development.
Actions Taken	Outreach efforts conducted to demonstrate ways of adopting the plan.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about better planning needs to protect waterbodies.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for the protection of water quality in the state's lakes and designated rivers. Monitoring water quality is necessary due to the potential impacts from development. - RSA 483:10 calls for the development of local river corridor management plans that may be adopted at the municipal level as part of a community's master plan. It also allows for a watershed based plan to be developed. - RSA 483:10(a) calls for the development of long-range management plans. - RSA 483-A:5(f) requires the Lakes Coordinator, in consultation with the LMAC, to prepare and submit to the Legislature state level management criteria, that include recreational uses of lakes consistent with the carrying capacity and character of each lake. - To date, selection criteria for the development of long-range management plans have begun and LMPP staff are currently developing the detailed Guidelines for Coordinated Lake Management and Shoreland Protection Plans document.

Growth and Development

NH DES, the NH Lakes Association, and the NH Rivers Council – *Report on the Economic Value of New Hampshire's Surface Waters: 2002-2007*

The Lakes, Rivers, Streams and Ponds Partnership conducted a multi-phased study on the economic values of the surface waters of New Hampshire. Phase I was an assessment of the existing literature, data, and methodological approaches. Phase II provided estimates of the economic value of five uses: fishing, swimming, boating, public drinking water and waterfront taxes. Phase III ascertained public opinion about the relative importance of different freshwater attributes, such as overall beauty of the area, water quality, pollution, and crowding, when New Hampshire residents decide to use the state's surface waters for recreational purposes, and how residents' attitudes and behaviors would change if these freshwater attributes were altered. Phase IV described the economic value that fishing, swimming and boating of New Hampshire freshwaters bring to the state by collecting primary data, and how that value might be affected by the quality of water resources, as perceived by the users.

Project Evaluation Summary	
Goal	To determine the economic value of multiple uses of New Hampshire freshwaters bring to the state and what perceived declining water quality means to visitors.
Findings	<ul style="list-style-type: none"> - Five uses of New Hampshire's surface waters show they annually contribute up to \$1.5 billion in total sales to the state's economy. - 6,000 jobs are associated with fishing, boating, and swimming. - Most users found New Hampshire water quality to be high. - Two-thirds of users stated they would decrease use of surface waters if they perceived any degradation to the resource. - The three most important reasons why people avoid certain surface waters are pollution, overcrowding and poor water quality.
Recommendations & Conclusions	\$51 million and 800 jobs would be lost if visitors perceived a decline in water quality.
Actions Taken	Four phases were completed.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	There is a need to integrate economic factors in protecting New Hampshire's surface waters because of how interconnected they are.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. Monitoring water quality is necessary due to the potential impacts from development. - RSA 483-A:5(f) requires the Lakes Coordinator, in consultation with the LMAC, to prepare and submit to the Legislature state level management criteria, that include recreational uses of lakes consistent with the carrying capacity and character of each lake. - RSA 483:10-a and 483-A:7 calls for the development of river and lake management plans.

Lake Management

NH Office of Energy and Planning - *Lakes and Great Ponds Report, Vol. 1 & 2*: 1985

The Governor requested technical background and local input on issues of development concerning NH lakes. A series of public meetings were held in the Lakes Region to gather local opinions on issues surrounding lakes and development. The Office of State Planning prepared background information summarizing user conflicts and recommended actions to prevent future degradation of the lakes of NH.

Project Evaluation Summary	
Goals	To investigate growth related problems affecting NH lakes. After public hearings, recommendations were given to improve monitoring and enforcement, provide funds, and initiate long-range management processes.
Findings	NH lakes have multiple users with often conflicting interests so plans must be implemented to moderate the differing interests.
Recommendations & Conclusions	<ul style="list-style-type: none"> - State land should only be leased for public benefit. - Wetlands boards receive funding and staff to review permits. - Speed, license, and age requirements for boat operators. - Include research to combat milfoil. - Certification for septic tanks in residences becoming year-round or being sold. - Draft a legislative proposal to protect the lakeshore of Great Ponds in light of future development pressures. - Draft a legislative proposal to define the lake management plan development process.
Actions Taken	Unknown.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Unchecked development can not ensure the long-term sustainability of our surface water resources.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483-A:5(f) requires the Lakes Coordinator, in consultation with the LMAC, to prepare and submit to the Legislature state level management criteria, that include recreational uses of lakes consistent with the carrying capacity and character of each lake. - RSA 483-A:7 requires the development of detailed Guidelines for Lake Management and Shoreline Protection Plans with recommendations for implementation. - RSA 483-B (CSPA) is in place to protect the shorelines of NH lakes.

Lake Management

Lakes Management Advisory Committee and the Lakes Management and Protection Program –
Lakes Management Criteria for New Hampshire State Agencies: 1996

In an effort to maintain the quality of New Hampshire lakes, the Lakes Management Advisory Committee with assistance from the Lakes Coordinator must work more aggressively to address poor or inappropriate development, runoff, erosion, pollution, ineffective septic tank drainage, and wildlife impacts while allowing the maximum public use. The Management Criteria is a document intended to provide state agencies with direction regarding activities affecting lakes.

Project Evaluation Summary	
Goals	To review and assess state agency actions as they pertain to the following criteria: 1. Water quality; 2. Potential sources of pollution; 3. Environment for wildlife; 4. Use of lakes for flood protection, drinking water supplies & flowage rights; 5. Recreation uses and carry capacity of lakes.
Findings	- 106 agency specific recommendations were developed - Many of the lake management priorities in the 1980s were still relevant in the 1990s - New issues and concerns evolved between 1984 and 1996 as lake uses changed - Support is needed to allow the LMPP to aggressively address carrying capacity, development, and other issues facing NH lakes.
Recommendations & Conclusions	Funding is needed to: 1. Inventory current conditions of NH lakes. 2. Enforce existing regulations. 3. Support the creation of management plans for all NH lakes. 4. Acquire lake data from surveys and the literature concerning all lakes and watersheds. 5. Develop a lake typology to determine carrying capacity and lake character. 6. Successfully complete several of the 106 recommendations. - Conflicts between departments should be discussed and resolved. - The Lakes Coordinator should facilitate communication and program coordination between state agencies and UNH.
Actions Taken	In 2006, the LMAC reviewed the status of the 106 recommendations and determined 33 have not been accomplished.
Action Outcomes	In 2006, the LMAC reviewed the 33 recommendations and ranked the five highest priorities.
Relationship to RMAC/LMAC Sustainability Initiative	Healthy lakes, shorelands, and watersheds must be maintained as development and population growth occurs. Conflicts could occur but coordinated efforts toward cooperation and communication could minimize conflict and improve conservation.
Relationship to RSA 483 & 483-A	This document outlines findings and recommendations for each section of RSA 483-A I a-f.

Public Access

NH Office of Energy and Planning - *Public Access Plan for New Hampshire's Lakes, Ponds, and Rivers*: 1991

Governor Gregg asked the Director of the Office of State Planning (OSP) to submit a Public Access Plan to "...include, but not be limited to boat launch access (trailer and car top), parks, marinas, mooring fields, beaches, and other facilities directly related to water oriented recreation." In addition, the components of the plan were to "...include an inventory of existing access facilities, pertinent standards and criteria to access adequacy, and recommended strategies identifying priorities, costs, potential sources of funding and responsible implementing agencies." Finally, an evaluation of "...environmental factors and socio-economic impacts associated with the recommended improvements..." were to be addressed in the plan.

Project Evaluation Summary	
Goals	To provide a plan to improve year-round public access to state waters for boating and non-boating activities, including facility availability, minimizing adverse environmental impacts, reduce conflicting socio-economic uses, and establish funding for implementation of the plan.
Findings	<ul style="list-style-type: none"> - Issues of public access are increasing as New Hampshire's population grows. - No inventory of public access points, including type and condition, currently exists.
Recommendations & Conclusions	<ul style="list-style-type: none"> - Develop a public access point inventory. - Establish one public access point for each five miles of shoreline or every 1,000 acres if surface water for great ponds and lakes. - Establish one public access point per ten miles of shoreline on navigable rivers. - A priority list of needed access points should be established where the need is the greatest. - A plan for using existing and new funding sources to establish access points over a five and 20 year period. Total costs were 36.8 million over 20 years, 16.7 million over the first five years. Particular emphasis was made on using money from land conservation projects as a new funding source to develop access points.
Actions Taken	Unknown.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about the need to include issues of protecting ecological integrity while balancing public access needs, and using opportunities such as land conservation to accomplish both activities.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - RSA 483-A:5 (e) calls for public access shall be provided and maintained appropriate to the suitable uses of the lakes. - RSA 483-A:5 (f) calls for the establishment of a lake's carrying capacity to maintain human and ecological demands.

Public Access

NH Fish and Game Department - *New Hampshire Public Access Needs Assessment Statewide Summary Report*: 1998

The NH Fish and Game Department (NHFG) is charged under RSA 233-A with providing public access to lakes and ponds ten acres or more. The NHFG study found that nearly two-thirds of state households participate in water-based recreation annually. Nearly 40% of respondents felt that New Hampshire does not have enough public access facilities, but 58% believe New Hampshire will lose natural quality if more access is developed. The most serious problems at lakes, ponds, and rivers, identified by respondents, revolved around human activities in and around the water.

Project Evaluation Summary	
Goals	To access the usage, public access needs, and perceived threats of New Hampshire's water bodies.
Findings	<ul style="list-style-type: none"> - 66% of NH households participate in water-based activity. - 40% think more access is needed. - 58% are concerned with natural quality loss if more access is developed.
Recommendations & Conclusions	- Most problems with lakes and rivers identified by users were caused by human related activities.
Actions Taken	Unknown.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Tools are needed to balance recreational demands on lakes and rivers while maintaining their integrity.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9-c, requires the establishment of protected instream flows for designated rivers, which includes the protection of recreational uses. - RSA 483:10-a calls for the development of long-range management plans on state-owned lands on designated rivers. - RSA 483-A:5 (e) calls for public access shall be provided and maintained appropriate to the suitable uses of the lakes. - RSA 483-A:5(f) requires the Lakes Coordinator, in consultation with the LMAC, to prepare and submit to the Legislature state level management criteria, that include recreational uses of lakes consistent with the carrying capacity and character of each lake.

Public Access

Appalachian Mountain Club - *An Analysis of Public River Access for Motorized Watercraft in Massachusetts, Vermont, New Hampshire, and Maine*: 2005

Data was collected through internet research of state statutes and policies, followed by personal communication with individuals from the state government agencies responsible for providing public river access and marine law enforcement. Information on public access site locations and accommodation type was provided by each state's Access Board or responsible agency, and was analyzed according to the laws applicable to each river. This study found that the level of conflict between access site size and river width varies greatly by state, from virtually no problems in Massachusetts to nearly half of New Hampshire's access sites potentially accommodating inappropriate utilization.

Project Evaluation Summary	
Goals	To determine if funding levels for public access sites are resulting in inappropriate access for rivers.
Findings	This study found that the level of conflict between access site size and river width varies greatly by state and nearly half of New Hampshire's access sites potentially accommodate inappropriate use.
Recommendations & Conclusions	Placing a boat size and power limit on access to some rivers may help curb inappropriate and illegal use, there may also be other ways of encouraging appropriate river use that can be applied by all states.
Actions Taken	None.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Inappropriate boat size on surface waters can be detrimental to other utilizations of the resource and can have negative ecological impacts. By potentially encouraging inappropriate boat size the state may be impacting waters it is required to protect.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9,VIII currently restricts motorized watercrafts on natural segments of designated rivers. - RSA 483:10-a Long-range management plans for state-owned land on designated rivers will help to ensure that appropriate access facilities are developed to encourage appropriate activity on designated rivers.

Water QualityLakes Region Planning Commission - *Lakes Region Water Quality Management Plan*: 1978

The Water Quality Management Plan is a report to the Lakes Region Planning Commission, a guide to the protection of water resources, and an environmental impact statement. This plan summarizes technical and management techniques that can be implemented to protect the Lakes Region's natural resources. Recommendations are given for land use controls, non-point pollution control, and point source pollution control. A summary is made of the conditions of each town in the region. Water quality assessment criteria, pollution controls, and land use controls for the entire region are also given.

Project Evaluation Summary	
Goals	To summarize the land use and pollution situation of each town in the lakes region and to suggest methods to improve the problem situations.
Findings	In order to maintain the increasing recreation-based economy of the Lakes Region, water quality of the lakes must be maintained.
Recommendations & Conclusions	Implement cost-effective land use controls to minimize non-point source pollution is a better solution than building sewage treatment plants in major portions of the Lakes Region.
Actions Taken	Unknown.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	The initiative calls for sustainable development to maintain water quality.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483-A:5 I (a) states that water quality shall not be degraded from existing water quality standards established in RSA 485-A. - RSA 483-A:5 I(b) states that potential sources of pollution, whether point or non-point sources on the land or deriving from activity on the lake, shall be managed in such a way as to minimize their adverse impact on water quality.

Water Quality

New Hampshire Department of Environmental Services - Basin Planning Program Report: 1996

The general design of the River Basin Planning Program Report has two main components - information and management. The first identifies and describes the information needed by the state to balance the various demands for water within the limits of available water supplies. The second describes management strategies and recommendations to provide more certainty to important existing and future water-use demands and to protect the public waters held in trust.

Project Evaluation Summary	
Goals	To manage and protect public waters for all while respecting individual riparian rights.
Findings	<ul style="list-style-type: none"> - The State has a responsibility to protect public trust interests and water availability for existing and future water-use demands. - The potential exists for demand to exceed water resource availability, increasing the likelihood of adverse impacts to public trust interests. - Water conservation and coordination of water-related efforts can increase the likelihood of adverse impact to public trust interests. - The ability to make water-related decisions based on an understanding of the biological, hydrological, and physical characteristics, the protected instream flows and local demands will increase the likelihood that public trust interests will be protected.
Recommendations & Conclusions	To meet its responsibility to oversee public trust interests, the state must locate public trusts interests and estimate the quantity of water needed in each of the following: environmental protection, ecological preservation, navigation, protection of water quality and public health, flood control, recreation, boating, fishing, swimming, protection of wildlife and aquatic life and consideration of scenic beauty or views.
Actions Taken	Developed a methodology for performing resource assessments to evaluate public trust interests.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	In order to balance private and public interests, all of these interests must be identified and evaluated. Since, public trust interests have not been identified or evaluated in any coherent way the resource assessment would be the first step.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483-A:5(f) requires the Lakes Coordinator, in consultation with the LMAC, to prepare and submit to the Legislature state level management criteria, that include recreational uses of lakes consistent with the carrying capacity and character of each lake. - RSA 483:9-c, requires the establishment of protected instream flows for designated rivers.

Water Quality

New Hampshire Department of Environmental Services - Unified Watershed Assessment State of New Hampshire: 1998

To develop New Hampshire's Unified Watershed Assessment, existing information was compiled primarily from the Clean Water Act (CWA) Section 303(d) list, the Source Water Protection Program, and the DES Biology Bureau databases. In order to aggregate the data up to the larger eight-digit Hydrologic Unit Code (HUC) scale, priority ratings were given to each database entry. Based on the aggregated prioritized data, the Coastal and Lower Merrimack watersheds were found to have the highest concentrations of water quality problems.

Project Evaluation Summary	
Goals	To use existing information to develop New Hampshire's Unified Watershed Assessment to identify watersheds that do not meet clean water and other natural resource goals and where preventative action is needed to sustain waters quality and aquatic resources.
Findings	The Coastal and Lower Merrimack watersheds have the most water quality issues.
Recommendations & Conclusions	A recommended long-term strategy for watershed restoration should involve building more local partnerships and continued monitoring to determine future restoration needs.
Actions Taken	The EPA provided additional 319 funding, some of which was used to establish the Coastal and Merrimack watershed restoration supervisor positions.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	<ul style="list-style-type: none"> - The need for developing partnerships to balance activities in the watershed and the need for continued monitoring to protect and restore New Hampshire's surface waters was recognized ten years ago by this report. - Without proper funding to maintain existing programs these partnerships and monitoring cannot take place. - Additionally, areas that had the largest water quality problems are the most rapidly growing in the state.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - Continued water quality monitoring is needed to determine areas that may require restoration and future restoration.

Water Quality

New Hampshire Department of Environmental Services - New Hampshire's Nonpoint Source Management Plan: 1999

The *Nonpoint Source Management Plan* was initially prepared by DES in 1989. It describes the status of nonpoint source (NPS) problems in New Hampshire and lists specific actions for the next five years relative to statewide programs and nonpoint source types to improve water quality by preventing and controlling nonpoint source pollution.

Project Evaluation Summary	
Goals	To use a mixture of regulatory and voluntary programs, primarily through the DES watershed management bureau, to organize planning, assessment and implementation tasks for point and nonpoint source control programs by river basin.
Findings	The development of watershed classifications as “needing restoration,” “presently meeting water quality goals,” and “under federal management (in the White Mountain National Forest).”
Recommendations & Conclusions	<ul style="list-style-type: none"> - Staff focus on watersheds in need of restoration, and DES implement a watershed coordinator position for larger watersheds to facilitate planning and restoration efforts. - Increase funding and technical assistance for local efforts in watershed protection. This may include the development of watershed management plans.
Actions Taken	Establishment of the Coastal and Merrimack watershed restoration supervisor positions.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Recognition of the need to coordinate watershed planning efforts at the state and local levels through a variety of means. This requires additional staff time and funding to provide technical assistance and facilitation efforts.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483 and 483-A call for establishment of a Rivers Program Coordinator and a Lakes Program Coordinator. However, since the programs establishment in 1988 and 1990 very few of the statutory requirements have been accomplished. - RSA 483-A:5 I(b) states that potential sources of pollution, whether point or non-point sources on the land or deriving from activity on the lake, shall be managed in such a way as to minimize their adverse impact on water quality.

Water Quality

U.S. Geological Survey - *Effects of Urbanization on Stream Quality at Selected Sites in the Seacoast Region in New Hampshire: 2001-2003*

A study of selected water quality and macroinvertebrate community data was conducted at ten stream sites in the Seacoast region of New Hampshire to determine if there is a relationship between stream quality and the extent of urbanization in a watershed. Watersheds with similar characteristics, but varying in their degree of urban development, were studied. The percent of impervious surface, the percent of urban land use in a watershed, and the percent of urban land use in two types of stream buffers were compared and correlated with stream quality variables.

Project Evaluation Summary	
Goals	To determine if there is a relation between stream quality (water quality and habitat conditions) and urbanization.
Findings	<ul style="list-style-type: none"> - The percentage of urban land use in the buffer zones and the percent of impervious surfaces in a watershed can be used as indicators of stream quality. - The higher the amount of impervious surface in an area the lower the number and variety of macroinvertebrates.
Recommendations & Conclusions	Sites with greater than 8-14% impervious surface in a watershed showed changes in water quality and habitat conditions.
Actions Taken	None.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation that urbanization directly leads to a decline in water quality. This will be particularly applicable to those regions in New Hampshire that are the fastest growing.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - Water quality data is needed to determine how growth in the state is impacting the state's surface waters.

Water Quality

Jordan Institute - *Report of Ranked Environmental Risks in New Hampshire: 2002*

Over three years, the Public Advisory Group studied 55 risks identified by both experts and average citizens. The group used four criteria to assess and compare each risk: severity, extent, reversibility and uncertainty, under the current level of regulations. The Public Advisory Group analyzed and discussed the technical information, as well as each group member's individual judgment and values to rank each risk. The 55 risks were ranked and described in the *Report of Ranked Environmental Risks in New Hampshire*, with major sources of the risk, a description of the impact of the risk and resources to learn more about reducing the risk. Of the top 12 risks analyzed, five are water-related.

Project Evaluation Summary	
Goals	To look at the relationship between public health, ecology, and the quality of life to reduce the risks to humans and the environment.
Findings	<ul style="list-style-type: none"> - The number one risk is degradation of surface water habitat caused by development which changes water chemistry in lakes, ponds, rivers, and streams. - The number three risk is loss of habitat caused by development. - The number four risk is physical alteration of water and shoreland habitat modifying shoreline or water flow, caused by human disturbance such as dams, dredging, water diversion/withdraw, channelizing flow, development, or loss of natural vegetation near the water or shore. - The number five risk is loss of water habitat by filling or draining wetlands. - The number six risk is acid deposition on forests, crops, soils and surface waters via rain, snow, fog and particles. - The number ten risk is degradation of forest habitat by fragmentation, disrupting forest cover by roads, development, utility corridors, agriculture, etc. - The number 12 risk is non-native organisms in surface water of lakes, ponds, rivers and streams introduced by plan or accident.
Recommendations & Conclusions	Due to limited resources in addressing risks to humans and the environment the focus of resources must be made on risks that hold the greatest threat and have the largest impact.
Actions Taken	None.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about the connection between the health of surface waters to environmental and socioeconomic factors.
Relationship to RSA 483 & 483-A	Both RSA 483 and 483-A note the importance that the state's surface waters as key environmental, social, and economic assets for the benefit of present and future generations.

Water Quality

New Hampshire Department of Environmental Services - *NH Section 305(b) and 303(d) Surface Water Quality Report (SWQ Report): 2006*

The Federal Clean Water Act requires states to submit a Surface Water Quality (SWQ) Report every two years. The SWQ Report is an important environmental indicator because it provides the most recent comprehensive assessment of water quality in the state's rivers, lakes, and tidal waters. Such information is vital for maintaining and restoring surface water quality in New Hampshire.

Project Evaluation Summary	
Goals	This document, which is commonly referred to as the "305(b) Report," fulfills the federal and state reporting requirements and includes an assessment of existing water quality in New Hampshire, and an overview of past and proposed water pollution abatement efforts.
Findings	<ul style="list-style-type: none"> - For many of the designated uses, nearly 40% of surface waters in New Hampshire have not been assessed and it is not likely that all of the more than 5,200 assessment units will ever be monitored. - Based on probabilistic and site specific assessments, 66.9% of the rivers and streams met water quality standards and 2.8% are impaired (excluding mercury impairments). - Based on site specific assessments, 56.1% of the lakes and ponds met water quality standards and 11.4% were impaired (excluding mercury impairments).
Recommendations & Conclusions	<ul style="list-style-type: none"> - Assessment of all 5,200+ assessment units is unrealistic (pending funding) DES proposes to conduct probabilistic assessments of all New Hampshire surface waters, grouped into six strata by waterbody type. - The probabilistic assessment will be repeated for each stratum every ten years. - It is extremely important that adequate federal funding is provided in the future to support such essential core programs to: 1) prevent the degradation of surface waters in the state, and 2) to protect the hundreds of millions of dollars which have already been invested to achieve the current high water quality.
Actions Taken	The SWQ Report is submitted every two years as required by law.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about the status of water quality in New Hampshire and the impacts inadequate program funding has on state-wide water protection programs.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - Continued and additional water quality monitoring data is needed to prevent degradation of surface waters and identify surface waters in need of restoration.

Water Quality

New Hampshire Department of Environmental Services - *DRAFT - Anti-degradation of New Hampshire Water*: 2007

The purpose of the New Hampshire Anti-degradation Provision (Env-Ws 1708) is to protect and maintain the water quality of state surface waters. It does so by establishing limits on the type and amount of pollutants that a waterbody can receive, depending on existing water quality. DES has established Anti-degradation Requirements for all activities with the potential to impact water quality. The requirements are based on the water quality category of each waterbody on a parameter by parameter basis to ensure that water quality will be maintained before the activity is permitted.

Project Evaluation Summary	
Goals	The purpose of the New Hampshire Anti-degradation Provision (Env-Ws 1708) is to protect and maintain the water quality of state surface waters.
Findings	The New Hampshire Anti-degradation Provision is part of the NH Surface Water Quality Standards, as required under the federal anti-degradation regulation 40CFR 131.12.
Recommendations & Conclusions	The provision established limits on the amount and type of pollutants that a surface water can receive, depending on existing water quality.
Actions Taken	DES has established Anti-degradation Requirements for all activities with the potential to impact water quality. The requirements are based on the water quality category of each surface water on a parameter by parameter basis to ensure that water quality will be maintained before the activity is permitted.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	RSA 483 & 483-A reinforce the state requirement to protect water quality.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - Continued and additional water quality monitoring data is needed to prevent degradation of surface waters. - RSA 483:9-c requires the state to regulate the quantity and quality of instream flow along designated rivers to conserve and protect outstanding characteristics. - RSA 483-A:5 I(b) states that potential sources of pollution, whether point or non-point sources on the land or deriving from activity on the lake, shall be managed in such a way as to minimize their adverse impact on water quality.

Water Quality

NH House Bill 710 - Establishing a Commission to Study the Leasing of State-Owned Real Estate on the Shores of Public Waters: 2007

Undeveloped shorefront and riparian land is ecologically significant and the most vulnerable to impacts. However, the State is leasing this land at a greatly reduced price to adjacent property owners and interested developers so they can construct private water access sites. This process fails to keep the interests of the public in mind. To remedy this, a legislative committee has been established to study the issues relative to the practice of leasing state-owned real estate on the shores of public waters. The commission is comprised of state agencies, legislators, the LMAC, RMAC, the Public Water Access Advisory Board (PWAAB), members of the public and current leaseholders. The commission will submit a final report to the legislature with its findings and recommendations for proposed legislation on November 1, 2008.

Project Evaluation Summary	
Goals	To study issues relative to the practice of leasing state-owned real estate on the shores of public waters.
Findings	The state currently owns 7,817 acres of waterfront property and in 2006 DES and the Water Resources Council leased 109 parcels to private individuals. A total of 1,619 new lots could be developed on DES-owned lands.
Recommendations & Conclusions	<ul style="list-style-type: none"> - The state has a tool in place to effectively manage its State-owned lands and, more importantly, places in context which parcels would be important to maintain and manage over time from a natural resource perspective. - RSA 483:10-a has the potential to be the primary vehicle for managing State-owned lands within the watersheds of designated rivers.
Actions Taken	The legislative committee filed its interim report on November 1, 2007.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Undeveloped shorefront is ecologically significant and the most vulnerable to impacts. Retaining shoreline in its natural condition is not only good for the health of the water; it contributes to better water quality, which in turn equates to higher property values.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:8 VI, "No state-owned property adjacent to or providing access to a river or river segment shall be recommended for disposal by the council on resources and development except upon the review and recommendation of the RMAC." - RSA 483:14, "No state-owned property adjacent to or providing access to a river shall be disposed of by the state except upon the review and recommendation of the RMAC." - RSA 483-A:5 II, "No state-owned property adjacent to or providing access to a lake shall be disposed of by the state except upon the review and recommendations of the LMAC."

Water Quality

NH House Bill 383 and NH House Bill 663 - Relative to the *Comprehensive Shoreland Protection Act*: Amendments to RSA 483-B: 2007

The purpose of the Comprehensive Shoreland Protection Act (CSPA) (RSA 483-B) is to protect the shorelands of the state and maintain the integrity of public waters. The CSPA was amended in 2007 to include a new shoreland permit program, a waterfront buffer, and impervious surface restrictions to become effective on April 1, 2008. Almost 1,400 miles of river have been added to the CSPA, but this still only covers 14% of all of New Hampshire's rivers.

Project Evaluation Summary	
Goals	The amended CSPA in 2007 aimed to strike a better balance between preferences of shoreland property owners and the need to protect the state's surface waters.
Findings	A 2005 review of the existing CSPA found that the standards established by the CSPA did not adequately protect the state's surface waters or shorelands.
Recommendations & Conclusions	<ul style="list-style-type: none"> - Legislation established staff positions to deal with the implementation and education/outreach of the CSPA. - Legislation added a permitting process, modified the waterfront buffer requirements, and included impervious surface limitations.
Actions Taken	New rules become effective April 1, 2008. A rules committee and education/outreach committee have been established.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Additional legislation protecting New Hampshire's surface waters, but it only covers fourth-order streams and higher.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. More water quality data is needed to determine if new CSPA rules are adequately protecting water quality. - RSA 483:10 calls for the development of local river corridor management plans that may be adopted at the municipal level as part of a community's master plan. It also allows for a watershed based plan to be developed. - RSA 483:10-a calls for the development of long-range management plans. Long-range management plans are needed for the state's surface waters to help combat the amount of impervious surfaces to protect water quality. - RSA 483-A:7 requires the development of detailed Guidelines for Lake Management and Shoreline Protection Plans with recommendations for implementation.

Water Quantity

NH Water Resources Board - *New Hampshire Waters Resources Management Plan*: 1984

The NH Waters Resources Management Plan was developed to outline the responsibilities of various state agencies and a method for coordinating information and decision making. The plan divided water use into seven categories: wetlands, fish and wildlife, agriculture and forestry, land use, energy production, recreation, and commercial use. The plan calls for monitoring the water used by competing interests and calls for a regional approach to conservation. Also outlined are the legislation actions required to fully implement the Water Resources Management Plan.

Project Evaluation Summary	
Goals	To develop a plan which would lead to allocation of water in accordance with an accepted priority of uses as determined on a case-by-case basis.
Findings	An area of severe data inadequacy exists, particularly water consumption and availability, which require new and expanded programs to allow for proper resource management.
Recommendations & Conclusions	The development of a water use prioritization plan, development plan methodology for regional water supply systems, and potential sources of funding.
Actions Taken	Development of the Drinking Water and Groundwater Bureau (DWGB) at DES in 1987.
Action Outcomes	Two topics currently be dealt with by DWGB are: - Expansion of long-term efforts to protect quality of water sources and - Possible conflicts with competing needs for limited surface water resources, such as recreation, fish management and dilution of treated wastewater effluent.
Relationship to RMAC/LMAC Sustainability Initiative	It has been recognized that water allocation for human use can negatively impact other activities, ecological function, and water quality, if not managed properly.
Relationship to RSA 483 & 483-A	- RSA 483-A:5(f) requires the Lakes Coordinator, in consultation with the LMAC, to prepare and submit to the Legislature state level management criteria, that include recreational uses of lakes consistent with the carrying capacity and character of each lake. - Carrying capacity and management plans being established on lakes and great ponds will help ensure that competing needs for human use and ecological needs are met. - RSA 483:9-c requires the establishment of protected instream flows for designated rivers. Establishing protected instream flows for designated rivers is directly linked with water allocation.

Water Quantity

New Hampshire Department of Environmental Services - Instream Flow Protection Pilot Program: 2002

RSA 483:9-c requires protected instream flows are “established and enforced to maintain water for instream public uses and to protect the resources for which the river or segment is designated.” A pilot program for instream flow protection was initiated in 2002 on two designated rivers – the Lamprey River and the Souhegan River. The completed pilot program will serve as a guideline for the protection of the other rivers in the future.

Project Evaluation Summary	
Goals	To establish a study and committee to determine protected instream flows for two designated rivers, the Lamprey River and the Souhegan River.
Findings	<ul style="list-style-type: none"> - It is in the interest of the state to do a comprehensive study regarding the establishment of protected instream flows and water management plans for two designated rivers and their tributary drainage areas. - It is in the interest of the state to initially restrict instream flow rules to two rivers to ensure that adequate information is available to develop the necessary protections instream flows and water management plans and to ensure effective and fair administration of the first application of instream flow regulations under the provisions of RSA 483.
Recommendations & Conclusions	<ul style="list-style-type: none"> - A pilot program was established for the purpose of studying and establishing protected instream flows and water management plans for the Lamprey River and the Souhegan Rivers and their respective tributary drainage areas. - The DES Commissioner shall adopt instream flow rules pursuant to RSA 541-A and RSA 483:9-c relative to the Lamprey River, as designated in RSA 483:15, I, and the Souhegan River, as designated in RSA 483:15, XIII. - For each of the designated rivers, the instream flow rules require that a protected instream flow study be conducted prior to the DES Commissioner adopting a protected instream flow level and water management plan.
Actions Taken	It is expected that protected instream flows will be established for the Souhegan River in early 2008; the Lamprey River is still being studied.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Establishment of protected instream flows for all designated river is a critical step in balancing socioeconomic demands and ecological demands on the state's rivers.
Relationship to RSA 483 & 483-A	The establishment of protected instream flows for designated rivers was mandated by RSA 483:9-c in 1990. As of 2007, none of the 15 designated rivers have protected instream flows.

Water Quantity

New Hampshire Department of Environmental Services - *Water Registration Process*: 2005

New Hampshire has been moving towards comprehensive management of its water resources since 1983 when the Legislature declared that surface water and groundwater are an integrated public resource to be conserved, protected and managed for the public good. Fundamental to sound management is knowledge of the occurrence and utilization of the resource. Initially authorized by Chapter 402 Laws of 1983, the water user registration and reporting program went into effect in the summer of 1987. Subsequent legislation was passed in 2005 (Chapter 488) that reinforced the program purpose and clearly affirmed DES's rulemaking authority. DES has proposed revised administrative rules for 2008 that would implement the requirements of RSA 488.

Project Evaluation Summary	
Goals	The objective of the program is to gather accurate data on the major uses of the state's water and the demands placed upon individual aquifers, streams and rivers.
Findings	The "unified reporting procedure" provides that if a user is already reporting data to another division or department of state government, and those data meet certain requirements, duplicate reporting to the New Hampshire Geological Survey is not required.
Recommendations & Conclusions	<ul style="list-style-type: none"> - A water use reporting program provides baseline information regarding major water uses in NH that is critical for managing water resources in an integrated manner. The information can provide legislative or regulatory decision makers with an understanding of the effects of cumulative water uses on the water budgets of aquifers and watersheds in NH and overall demands on water resources. - An accurate water use reporting program improves the management of state-wide water resources by identifying the quantity and timing of existing water uses and enabling future water demands and associated effects to be projected. - Water Use Registration and Reporting provides a tool for ensuring compliance with laws regulations, and water rights.
Actions Taken	New rules to implement this program are anticipated in 2008.
Action Outcomes	None.
Relationship to RMAC/LMAC Sustainability Initiative	Due to limited water quality data and funding for the collection of data the state must utilize its current resources to their maximum capacity, including ensuring all reporting on water resources use is available for other analysis.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9-c calls for establishing protected instream flows for all designated rivers. - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's designated rivers and lakes. - Water quality monitoring and the establishment of protected instream flows can contribute to other DES activities and monitoring efforts.

Water Quantity

New Hampshire Department of Environmental Services - Groundwater Withdrawal Program: 1998

In 1998, two State laws, the Groundwater Protection Act and the Safe Drinking Water Act, were amended to ensure that undesirable impacts to water resources from new large groundwater withdrawals are identified and addressed. Any groundwater withdrawal from a new well having a maximum withdrawal of 57,600 gallons per day or more is considered to be a large groundwater withdrawal.

Project Evaluation Summary	
Goals	To ensure that groundwater withdrawals do not create negative impacts to water resources.
Findings	Not applicable.
Recommendations & Conclusions	The Large Groundwater Withdrawal Rules include a two-tiered approach to assess the potential impacts of a proposed withdrawal. A new large groundwater withdrawal will be designated as either major or minor based upon the magnitude of the proposed withdrawal and/or the potential impacts associated with developing a new withdrawal at a given site. A new large groundwater withdrawal with a minor designation will undergo a less intense hydrogeologic analysis and testing than that of a withdrawal with a major designation.
Actions Taken	Unknown.
Action Outcomes	Unknown.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about the state's recognition of the impacts of competing uses of water consumption and the need to balanced these uses to meet human and ecological demands.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - RSA 483:10-a calls for the development of long-range management plans for state-owned land along designated rivers -RSA 483-A:7 calls for the development of Guidelines for lake management and shoreland protection plans. - Long-range management plans and water quality monitoring will help ensure that groundwater withdrawals do not negatively affect the state's surface waters for human and ecological needs.

Wildlife

NH Fish and Game Department - *Wildlife Action Plan (WAP)*: 2006

The goal of the Wildlife Action Plan (WAP) is to identify areas where the most vulnerable wildlife species and habitats are in relation to rapid changes in the natural landscape. The plan was the result of combined efforts of federal, state, local, and private organizations and entities. The WAP identified that urban development is outpacing land protection and that wildlife is suffering from the impacts of human disturbance on the local and state levels. Prioritized plan implementation strategies were developed and to date approximately 40 have been started or accomplished.

Project Evaluation Summary	
Goals	To identify areas where the most vulnerable wildlife species and habitats are in relation to rapid changes in the natural landscape.
Findings	<ul style="list-style-type: none"> - Urban development is outpacing land protection. - 16 wildlife species are at high risk of extirpation in NH. - 11 of 27 priority habitats are at high risk and in need for conservation.
Recommendations & Conclusions	<ul style="list-style-type: none"> - Regional water and air quality issues are major threats to wildlife in terms of cumulative degradation and localized impacts. - Provide public and private entities information and assistance with sustainable development in sensitive wildlife areas. - Human intervention, including restoration, management, and regulatory protection, will be needed to improve some degraded habitats. - Continued data collection, storage, and analysis are needed to track the status and condition of NH's wildlife adaptation to changing conditions.
Actions Taken	<ul style="list-style-type: none"> - 72 prioritized strategies for WAP implementation were developed. - Informational workshops have been across the state to demonstrate how to interpret and incorporate the plan into decisions about development.
Action Outcomes	<ul style="list-style-type: none"> - 40 of the 72 implementation strategies have been accomplished or are in progress. Most accomplished strategies were led by NHFG. - Through 22 workshops the mapping portion of WAP has reached 1,300 individuals in 133 towns in NH.
Relationship to RMAC/LMAC Sustainability Initiative	Reinforcing documentation about the connection between human disturbance and ecological health.
Relationship to RSA 483 & 483-A	<ul style="list-style-type: none"> - RSA 483:9, 9-a, 9-aa, and 9-b and 483-A:5 call for protection of water quality in the state's lakes and designated rivers. - RSA 483:10-a calls for the development of long-range management plans for state-owned land along designated rivers. - RSA 483-A:5(c) state level management criteria be submitted to the Legislature, that includes the environment for wildlife, particularly waterfowl and aquatic life, shall be maintained and or improved. - Monitoring water quality is necessary due to the potential impacts from development to wildlife. However, at this time DES does not have a methodology for assessing the wildlife designated use.